



The Mediatrix® 1204 is a high-quality and cost efficient VoIP gateway connecting IP networks to the PSTN.

It is the ideal solution to deploy private or small hosted toll bypass networks.

For enterprise end-users, the Mediatrix 1204 provides a simple, transparent and cost-effective way of maintaining a connection to the PSTN while migrating to an IP-based telephony infrastructure.

- PSTN connectivity to IP-based telephone systems
- IP connectivity for analog PSTN lines
- IP connectivity for legacy PBX Systems
- Provides PSTN users access to a VoIP Network

Key Benefits

Voice Functionalities

- Carrier-grade voice quality

Ease of configuration and management

- Automatic firmware and configuration file download
- SNMP and web management
- TFTP or HTTP auto-provisioning

Security

- Support for SNMPv3
- Encrypted configuration files support
- HTTP Digest authentication

Mediatrix® 1204

4-port VoIP FXO Gateway



Mediatrix® 1204 Overview

The Mediatrix 1204 connects up to 4 FXO trunks to an IP Ethernet access

The Mediatrix 1204 provides PSTN access for various VoIP endpoints such as IP phones, FXS devices, softphones and IP-based PBX and Key Systems. It is an efficient solution to maintain local PSTN breakout in remote locations that are converted to IP.

The Mediatrix 1204 provides a gateway to the PSTN for IP-based PBX and Key Systems. Thereby, it allows the deployment of VoIP Remote Line Extension and Branch Office Connectivity solutions without sacrificing any local PSTN access points.

By connecting CO lines from selected sites to a VoIP network, the Mediatrix 1204 enables service providers and enterprises to use a VoIP connection between pre-determined local networks. When used in conjunction with Mediatrix® Dial IPCS communication server, routing schemes and calling rights can be programmed in order to optimize the use of resources and minimize long distance fees.

As all other Mediatrix devices, the 1204 provides web interface, giving users a convenient access to the unit for initial set-up. The devices can also auto-provision by fetching their encrypted configuration from a TFTP or HTTP server making installation secure and transparent to the end-users. To further facilitate deployments, factory loaded configurations are possible.

Functional Description

FXO Ports

The Mediatrix 1204 ports benefit from all the advanced telephony CLASS features available today. On-Hook reception of Caller-ID information can be processed internally by the DSP engine. Also, the FXO ports permit features such as Selective Ringing and message waiting to be used by the main controlling software.

Default settings for the FXO ports are such that BellCore/North American standards are met. On request, port settings may be modified to comply with other known international standards. Software-configurable port setting for international requirements is available.

Fax Interface

The Mediatrix 1204 can handle G3 fax transmissions at speeds up to 14.4 kbps. Automatic fax mode detection is also available on all ports, as well as Real-Time Fax-Over IP with T.38 protocol stack. Data handling and synchronization formerly T.4 and T.30 protocols, are processed by the embedded DSP and CPU.

Quality of T.38 fax transmissions is dependent upon the system configuration, type of call control system used, type of Mediatrix units deployed, as well as the model of fax machines used. Should some of these conditions be unsatisfactory, performance of T.38 fax transmissions may vary and be reduced below expectations.

Housing & Power

The Mediatrix 1204 is designed to be desktop stackable. With the appropriate optional mounting kit, the Mediatrix 1204 can be wall-mounted or rack-mounted.

The unit is powered by an internal universal power supply connected to the AC main with a standard IEC-320 power cord.

SIP Specific Features

The Mediatrix 1204 supports the SIP signaling protocol as an endpoint entity. It can communicate directly with other endpoints (direct IP call) or register to a SIP call agent should the user request to.

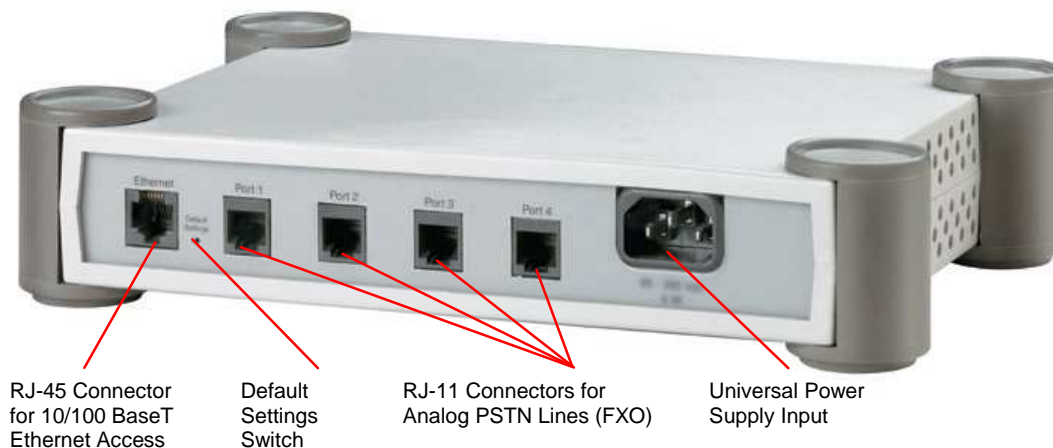
Full Integration with the *DiaL* IPCS Communication Server

When configured with the SIP protocol, Mediatrix units contact the *DiaL* IPCS Communication Server to obtain the IP address associated to the corresponding dialed number. If no corresponding IP address is returned, the IP Communication Server will try to locate the nearest gateway to the destination number on the PSTN. Any of the Mediatrix 1204's four ports can be used to make such a gateway call.

H.323 Specific Features

The Mediatrix 1204 uses a Gatekeeper to provide specific services.

Rear view of the Mediatrix® 1204



Additional Features

Remote Configuration / Easy Management

The Mediatrix 1204 can be integrated seamlessly within an existing administrative environment. SNMP support allows device-related adjustment parameters to be modified and polled remotely. Implementation of a web interface provides user-friendly access to common parameters. Firmware upgrade (CPU and DSP code) and configuration files are downloaded via a TFTP or HTTP server. Auto-provisioning of Mediatrix units is performed with added security through configuration file encryption and HTTP digest authentication.

Industry Standard Protocols

The Mediatrix® 1204 has been designed to support all major industry standards used today as well as those that will eventually be implemented at a later date. Because of this specific design characteristic, the Mediatrix® 1204 can be integrated with existing telephone, fax and LAN/WAN equipment such as bridges, routers and switches.

Supported Standards

Vocoders	<ul style="list-style-type: none"> • G.711 (a-law, μ-law) • G.723.1 (H.323 v4.0) • G.723.1a • G.726 (SIP v5.0,) • G.729a (SIP v4.4, H.323 v4.0) • G.729ab
IP Telephony Protocols	<ul style="list-style-type: none"> • SIP – RFC3261 • H.323v3
Real-Time Transport Protocols	<ul style="list-style-type: none"> • RTP/RTCP – RFC1889, RFC1890, RFC2833, RFC3389
Network Management Protocols	<ul style="list-style-type: none"> • SNMPv3 • HTTP 1.0 – RFC1945 (SIP v5.0, H.323 v2.4) • Basic and digest HTTP authentication – RFC2617 (SIP v5.0) • DHCP – RFC2131, RFC2132 • TFTP – RFC1350, RFC2347, RFC2348, RFC2349 • Syslog
QoS	<ul style="list-style-type: none"> • ToS • DiffServ • 802.1p • 802.1Q

General Specifications

Display

- Power LED
- LAN activity LED
- Activity/In-Use LED indication on FXO ports
- Ready LED

Connectors

- 4 RJ-11 connectors, analog line (FXO) interface
- 1 RJ-45 connector, 10/100 BaseT Ethernet access (autosense: up to 100 Mbits)

Power

- Integrated universal power supply input that can accept 100 to 240 Vac, 50/60 Hz input.
- Seamless switch over period if the client UPS detects a power loss and activates within 10 ms.

Casing / Mechanical

Casing: Desktop (Plastic ABS UL94 V0), stackable

Product Architecture Details

- Supports four concurrent communications
- DSP-based DTMF detection, generation and synthesis
- DSP-based echo cancellation (G.168)
- DSP-based fax/data relay
- Embedded operating system with 32-bit real-time multitasking Kernel
- Embedded IPv4 TCP/IP stack with configurable QoS implemented by:
 - a) ToS byte at Network layer 3
 - b) 802.1p at Data Link layer 2
- Network parameters assigned via DHCP

Real Time Fax Router Technical Specifications

Automatic selection between voice and fax

Protocols	Group 3 Fax Clear channel (G.711), G.726 or T.38 Real Time Fax Over IP protocol Stack
Fax Data Compression	MH
Fax Transmission Protocols	Up to 14.4 kbps

PSTN Interface (FXO)

- Programmable line interface
 - Programmable loss plan
 - Built-in transient/surge protection
 - 4 RJ-11 connectors
 - Detection of Selective Ring
- | | |
|---------------------------|--|
| Trunk Type | Loop Start/Ground Start (software configurable) |
| Ring Detection | 22 VRMS min, 15 Hz to 68 Hz (configurable by parameter) |
| Nominal Impedance | AC and DC impedance software configurable to support most countries worldwide. |
| Ringer Equivalence | 0.8 REN (with Caller ID)
0.2 REN (without Caller ID) |

Miscellaneous Audio Specifications

- Software input and output level adjustable within the range -36 dB to +12 dB.
- Software-adjustable dynamic and static jitter buffer protection.
- DSP-based echo control device.
- Silence detection/suppression level software adjustable.

DTMF Tone Detection

16 Digit DTMF Decoding	0 to 9, *, #, A, B, C, D
Permitted Amplitude Tilt	High frequency can be +2 dB to -8 dB relative to low frequency
Dynamic Range	-35 dBm to +3 dBm per tone
Frequency Accept	± 1.5% of nominal frequencies
Minimum Tone Duration	40 ms, can be increased with software configuration
Interdigit Timing	Detects like digits with a 40 ms interdigit delay

DTMF Tone Generation

Per Frequency Nominal	-6 dBm to -4 dBm
Frequency Deviation	Less than 1%

Standards Compliance

Agency Approvals	<ul style="list-style-type: none"> ● UL ● CE Marking ● FCC ● JATE ● CSA ● Anatel ● NOM ● ACA (A-Tick marking)
Safety Standards	<ul style="list-style-type: none"> ● IEC60950 3rd Edition (1999), with all national deviations ● UL60950 3rd Edition (2000) ● CAN/CSA-C22.2 No. 60950-00 ● AS/NZS 60950: 2000 ● Anatel Res. 238 ● NOM-019-SCFI-1998
Emissions	<ul style="list-style-type: none"> ● FCC Part 15 (1998) Class A ● EN55022 (1994) Class A, with amendments A1 and A2 ● EN61000-3-2 (1995) Harmonic Current Emissions ● EN61000-3-3 (1995) Voltage Fluctuations and Flicker ● Anatel Res. 237
Immunity	EN55024 (1998) including the following: <ul style="list-style-type: none"> ● EN61000-4-2 (1995), ESD ● EN61000-4-3 (1996), Radiated RF ● EN61000-4-4 (1995), Burst Transients ● EN61000-4-5 (1995), Surge ● EN61000-4-6 (1996), Conducted RF ● EN61000-4-11 (1995), Voltage Dips and Interruptions
Telecom	<ul style="list-style-type: none"> ● FCC Part 68:Subpart D ● Industry Canada CS-03 Issue 8 Part 1 ● TBR 21:January 1998 ● AS/ACIF S002: 2001 ● AS/ACIF S003: 2001

MTBF Value

The Mean Time Before Failure (MTBF) value of the Mediatrix 1204 is 440 000 hours at 25 degrees Celsius ambient temperature. It has been defined using RelCalc v5.0, Bellcore method (LimitedStress - Method I, Case 3).

Power Consumption

Idle Mode; 85Vac	I = 81 mA	P = 3.1 W
Idle Mode; 265Vac	I = 44 mA	P = 3.2 W
LoopBack on 4 Ports + Ping; 85Vac	I = 115 mA	P = 4.96 W
LoopBack on 4 Ports + Ping; 265Vac	I = 64 mA	P = 5.1 W

Operating Environment

Operating Temperature	0°C to 40°C
Humidity	up to 85 %, non-condensing
Storage	-20°C to +70°C

Dimensions and Weight

Without Rack Mounting Tabs	4.5 cm x 22 cm x 18 cm – 1.8 x 8.8 x 7.2 in. (approx.)
With Rack Mounting Tabs	4.5 cm x 23 cm x 18 cm – 1.8 x 9.2 x 7.2 in. (approx.)
With Rubber Feet	5.5 cm x 26 cm x 18 cm – 2.2 x 10.4 x 7.2 in. (approx.)
Weight	750 g (1.7 lb)

Warranty

All Mediatrix products carry Mediatrix Telecom's standard one-year hardware and software warranty. An extended warranty is available.

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